REMARKS

Applicant requests reconsideration of the present application in view of the foregoing amendments and the discussion that follows. The status of the claims is as follows. Claims 1-61 were originally filed. Claims 5-7, 10, 16-20, 22-56, 60 and 61 have been withdrawn from consideration in the present Office Action. Applicant reserves the right to file divisional applications to the separately patentable subject matter of the aforementioned claims as well as to the non-elected species. Claims 1, 12 and 57 have been amended herein, Claims 8, 9, 14 and 15 have been canceled herein and Claims 62-63 have been added.

The Amendment

The Specification was amended to provide a new title as suggested in the Office Action. The Specification was also amended to correct a typographical error and to provide an issued patent number for a patent application referred to in the Specification.

Claim 1 was amended to recite that the target probe has covalently coupled thereto a redox active moiety selected from the group consisting of transition metal complexes and organic electron donors or the target probe has attached thereto one member of a bioconjugate pair that binds to the other member of a bioconjugate pair comprising a redox active moiety selected from the group consisting of transition metal complexes and organic electron donors. Support therefor is in the Specification, for example, page 23, line 24, to page 24, line 10.

Claim 12 was amended in a manner similar to that for Claim 1 above.

Claim 57 was amended to recite that the electronically responsive detector agent is selected from the group consisting of transition metal complexes and organic electron donors. Support therefor is in the specification, for example, page 23, line 24, to page 24, line 10. Claim 57 was also amended to replace "binding" with "hybridization" and "bound" with "hybridized" as suggested in the Office Action. Claim 57 was also amended to recite in step (b) "applying selectively" and to recite in step (c) "detecting selectively." Support therefor is in the Specification, for example, page 29, lines 25-29.

Claims 62-63 were added and find support in the Specification, for example, original Claim 1 and page 24, lines 12-15.

Objection to Title

The Office Action indicated that the title of the invention is not descriptive. Applicant submits that the title as amended obviates this objection.

Rejections under 35 U.S.C. §112

Claims 1-4, 8, 9, 11-13, and 21 were rejected under 35 U.S.C. 112, first paragraph, because the specification, alleges the Office Action, while being enabling for methodology wherein either the redox moiety (claims 14 or 15) is incorporated into a probe or an electronically responsive element lengthens an oligonucleotide probe does not reasonably provide enablement for claim embodiments wherein there is no particular connection between such a moiety or element and a probe molecule which recognizes the desired target molecule. Applicant submits that the above amendments obviate this ground of rejection.

Claims 57-59 were rejected under the above code section for use of generic binding terms such as "binding" and "bound" with regard to the binding of oligonucleotide probes to target nucleic acids. Applicant submits that the amendments to Claim 57 obviate this ground of rejection.

Rejections under 35 U.S.C. §102

Claims 1-4, 8, 9, 11-15, 21, and 57-59 were rejected under paragraph (e)(1) of the above code section as being anticipated by De Lumley-woodyear, *et al.* (U.S. Patent Application Publication 2002/0081588) (De Lumley-woodyear). The reference discusses multi-sensor arrays for electrochemical recognition of nucleotide sequences and methods for their use. Electrodes and microelectrodes were produced by electrophoretically depositing individual nucleic acid molecules upon individual microelectrodes to provide an element in an array of individually addressable hybridization and/or melting sensing elements. The deposited sensor oligonucleotides are coupled to a redox polymer, which is disposed on the electrode and which provides the basis for electrochemical detection of hybridization events.

In order to maintain a rejection under 35 U.S.C. §102(b), the Examiner must first establish a *prima facie* case of anticipation. An invention is anticipated if each and every limitation of the claimed invention is disclosed in a single prior art reference. *In re Paulsen*, 30 F.3d 1475, 1478, 31 U.S.P.Q.2d 1671, 1673 (Fed. Cir. 1994).

In the present situation, De Lumley-woodyear does not disclose each and every element of the presently claimed invention of Claims 1 and 12 and those claims dependent therefrom. The reference fails to disclose or suggest the use of a target probe that is covalently coupled to a redox active moiety selected from the group consisting of transition metal complexes and organic electron donors or the use of a target probe that is attached to one member of a bioconjugate pair that binds to the other member of a bioconjugate pair where such other member comprises a redox active moiety selected from the group consisting of transition metal complexes and organic electron donors.

With regard to Claim 57 and claims dependent therefrom, the reference does not disclose or suggest treating each test site, to which a target nucleic acid is hybridized, to

extend the length of each oligonucleotide probe thereby incorporating an electronically responsive detector agent into each of the oligonucleotides where the electronically responsive detector agent is selected from the group consisting of transition metal complexes and organic electron donors.

With regard to Claim 62, De Lumley-woodyear does not disclose or suggest the method as claimed wherein at least one target probe is an oligonucleotide probe, and a redox active moiety as defined in Claim 1, from which Claim 62 depends, is covalently attached to a nucleotide of the oligonucleotide probe. With regard to Claim 63, De Lumley-woodyear does not disclose or suggest the method as claimed wherein at least one target probe is an oligonucleotide probe, and a redox active moiety as defined in Claim 1, from which Claim 63 depends, is covalently attached to the 3' or 5' nucleotide of the oligonucleotide probe.

Conclusion

Claims 1-4, 8, 9, 11-15, 21, 57-59 and 62-63 satisfy the requirements of 35 U.S.C. §§112 and 102. Allowance of the above-identified patent application, it is submitted, is in order.

Respectfully submitted,

Theodore J. Leitereg
Attorney for Applicant
Reg. No. 28,319

Agilent Technologies, Inc.
Legal Department, M/S DL429
Intellectual Property Administration
P.O. Box 7599
Loveland, CO 80537-0599